Roll No. ……..

BCA-S–303

Bachelor of Computer Applications
(Third Semester)
EXAMINATION, 2024-25

PROGRAMMING USING PYTHON

Time : $2\frac{1}{2}$ Hours

Maximum Marks : 60

Note : All questions have to be attemped.

Section—A 1 each

(Multiple Choice Questions)

1. (a) What was the primary programming language Guido Van Rossum was working on before creating Python ? (CO1, BL-2)

   (i) ABC

   (ii) Perl

   (iii) C++

   (iv) Pascal

(b) Which of the following is the correct syntax to create syntax to create a class in Python ?

(CO3, BL-3)

(i) class Myclass [ ] :

(ii) class Myclass :

(iii) class Myclass ( ) :

(iv) def class Myclass :

(c) How can you access a name-mangled variable from outside the class ? (CO3, BL-2)

(i) Using the original variable name

(ii) By using the getattr( ) function only

(iii) It cannot be accessed outside the class

(iv) Using its mangled name

(d) The return value of a function with no return statement is : (CO2, BL-3)

(i) 0

(ii) False

(iii) None of the above

(iv) " "

(e) Accessing function annotations can be done using : (CO2, BL-2)

(i) - - annotations - -

(ii) annotations ( )

(iii) get_annotations ( )

(iv) - - function - -

(f) random . random ( ) gives the value : (CO2, BL-2)

(i) An Integer between 0 and 1

(ii) A random string

(iii) A random boolean value

(iv) A float between 0 and 1

(g) The Python module commonly used to intract with SQLite database is : (CO4, BL-3)

(i) dbsqlite

(ii) sqlite3

(iii) SQLALite

(iv) Pyodbc

(h) Closing the database connection in Python using sqlite3 is essential because :

(CO4, BL-3)

(i) It prevents memory leaks.

(ii) It allows other applications to access the database.

(iii) It saves all unsaved changes.

(iv) Both (i) and (ii)

(i) A ZeroDivisionError in Python typically occurs when : (CO3, BL-2)

(i) Division by zero is attempted.

(ii) An invalid type is used.

(iii) An index is out of range.

(iv) A function is called with incorrect arguments.

(j) When using a try block, if an exception occurs. The flow of control moves to :

(CO3, BL-3)

(i) The next line after the try block

(ii) The except block

(iii) The finally block

(iv) The calling function

(k) The method to reshape a Numpy array is :

(CO5, BL-3)

(i) np.change-shape ( )

(ii) np.size ( )

(iii) np.reshape ( )

(iv) np.modify-shape ( )

(l) The primary data type used in Numpy for floating-point numbers is : (CO5, BL-3)

(i) int

(ii) decimal

(iii) float

(iv) float64

2. Attempt any *four* of the following : 3 each

(a) Explain Nested Loop in Python. (CO1, BL-4)

(b) Purpose of Math module. (CO2, BL-2)

(c) Describe the Regular expression. (CO3, BL-4)

(d) Describe the role of cursor in database handling. (CO4, BL-3)

(e) Describe the history of Python. (CO1, BL-2)

Section—B

(Long Answer Type Questions)

3. Attempt any *two* of the following : 6 each

   (a) Differentiate list and tuple in detail and give examples for all differences. (CO1, BL-3)

   (b) WAP to check whether a given number is a Happy Number or not. (CO2, BL-5)

   (c) WAP to create a Random Password with the following : (CO2, BL-5)

      (i) Maximum Length 10 characters

      (ii) Min. Length 6 characters

      (iii) Must contain (one upper, one lower)

      (iv) Must contain (one digit)

      (v) No special characters

4. Attempt any *two* of the following : 6 each

   (a) Explain the concept of function overloading and overriding in class with suitable examples. (CO3, BL-4)

   (b) Explain the concept of Multiple Inheritance. Give suitable example. (CO3, BL-4)

   (c) Explain Python Libraries : (CO5, BL-3)

      (i) Pandas

      (ii) Matplotlib

      (iii) OS

5. Attempt any *two* of the following : 6 each

(a) Explain the concept of Dictionary in Python. Create a Nested Dictionary. Take any example and also use the del and pop ( ) method to remove item from dictionary.

(CO1, BL-5)

(b) Write a Python program to match a string that contains only upper and lowercase letters, numbers and underscores. (CO3, BL-4)

(c) WAP to check whether a given no. is prime or not. (CO1, BL-6)